

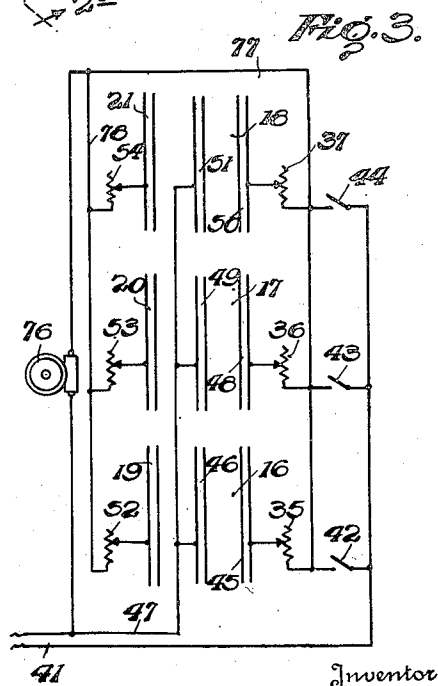
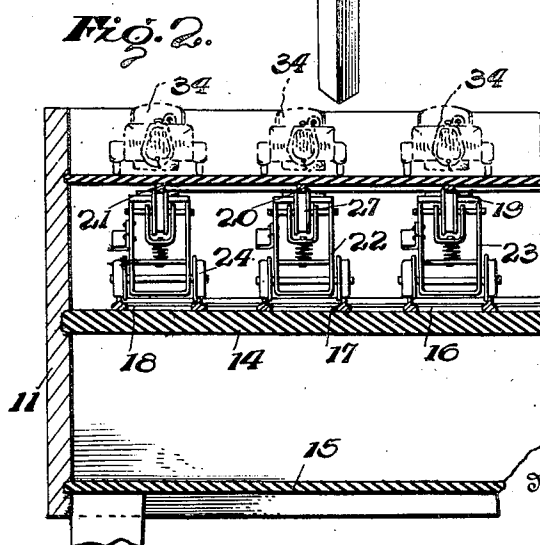
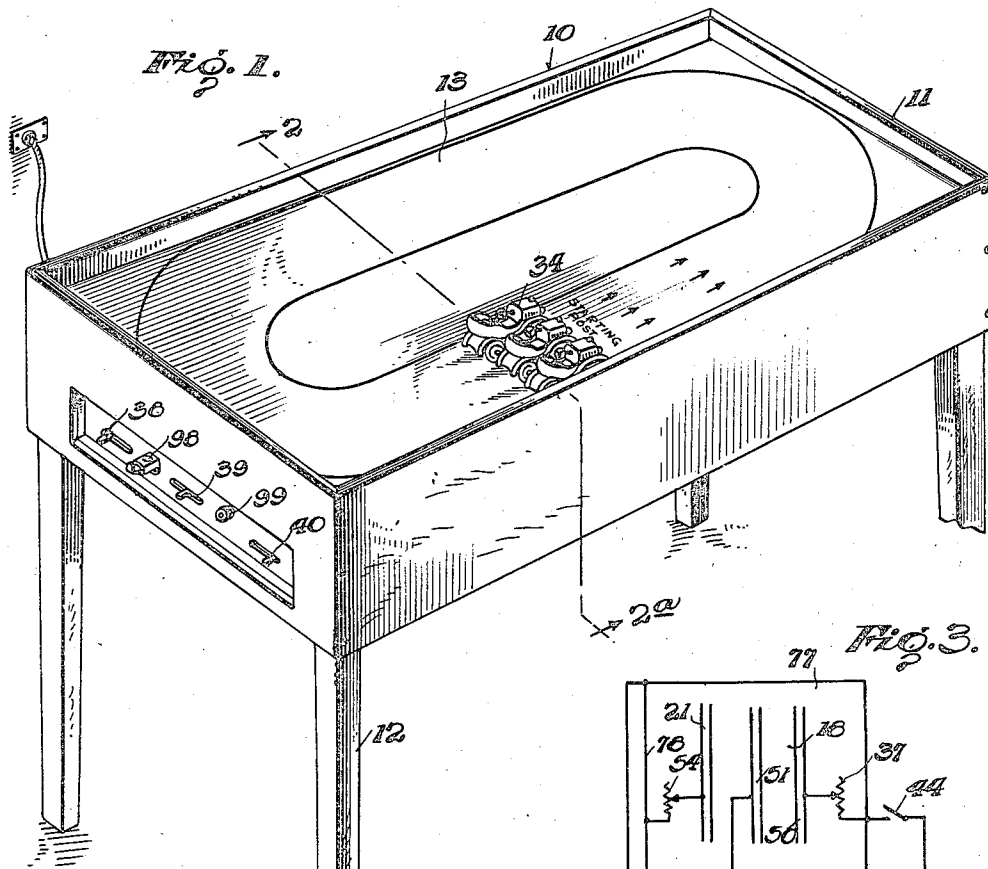
Jan. 30, 1940.

M. R. BERNHARDT
ELECTRICAL RACE TRACK

2,188,619

Filed Aug. 10, 1938

4 Sheets-Sheet 1



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Jan. 30, 1940.

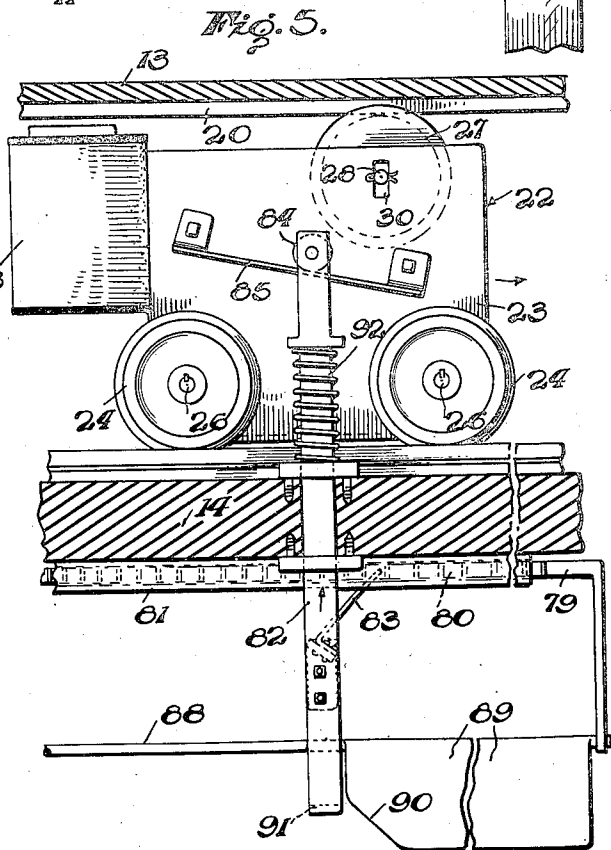
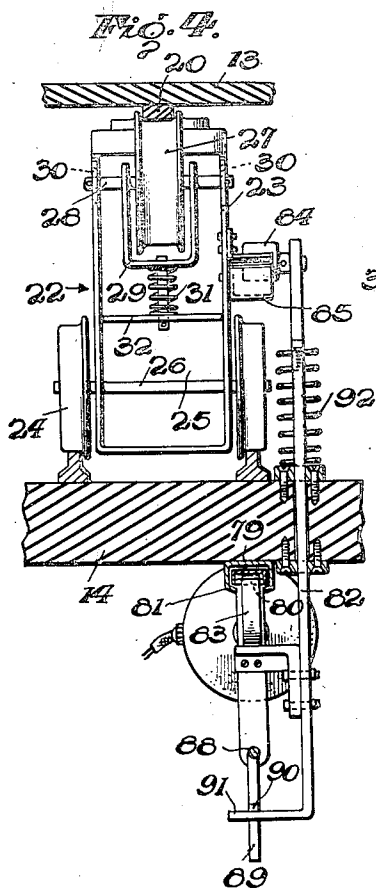
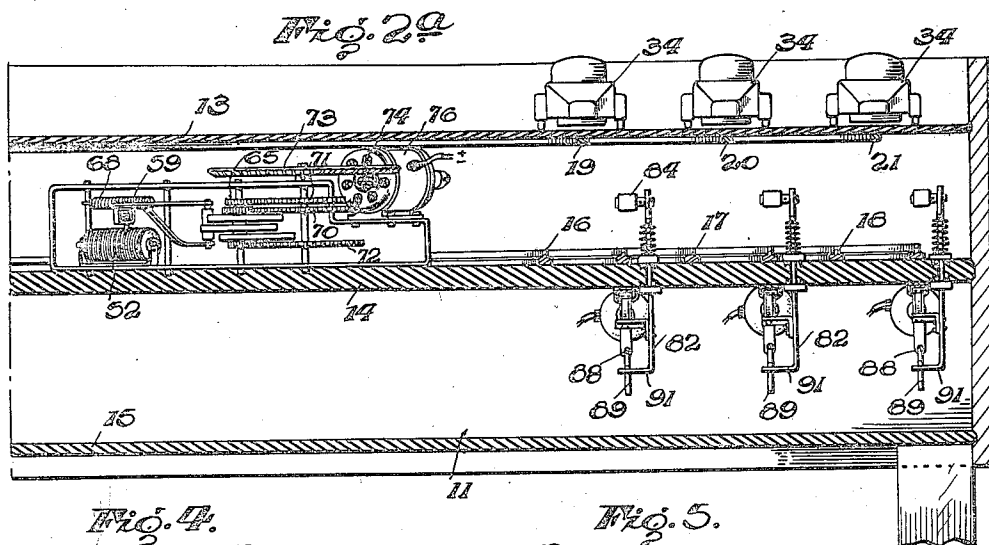
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4 Sheets-Sheet 2



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Fig. 6.

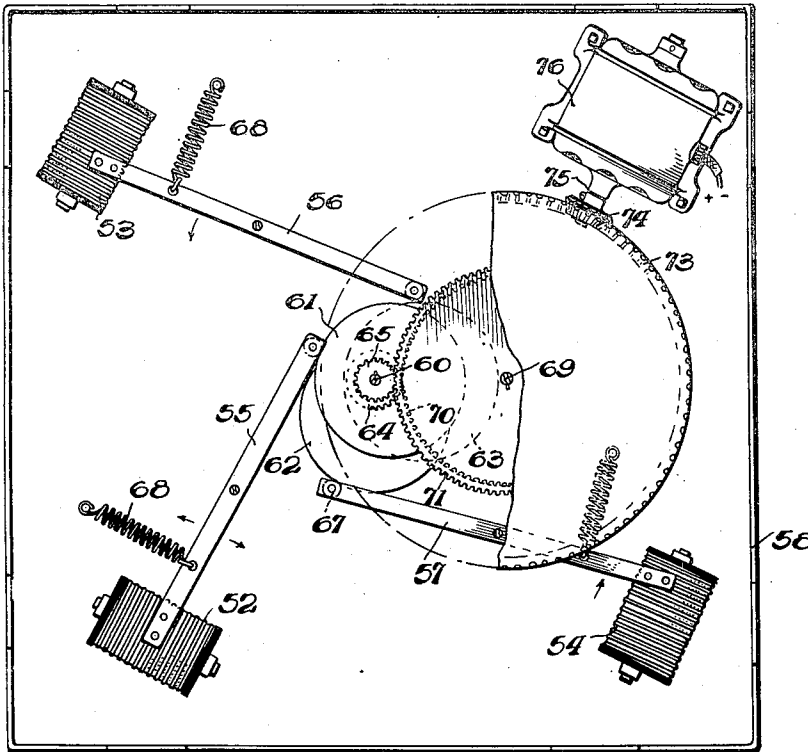


Fig. 7.

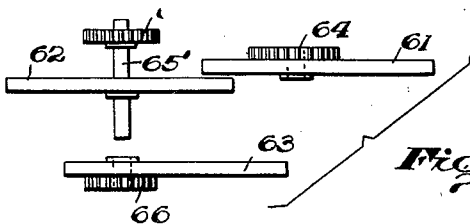
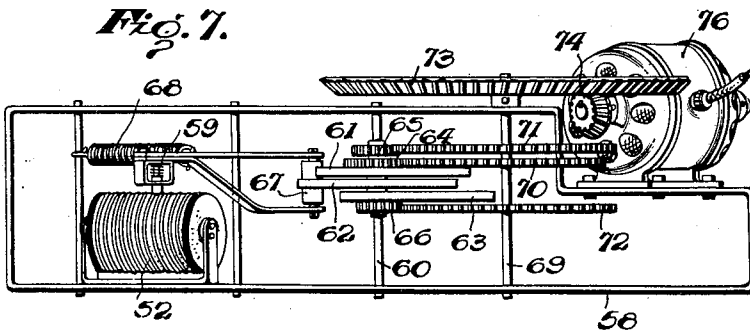


Fig. 8.

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4 Sheets-Sheet 4

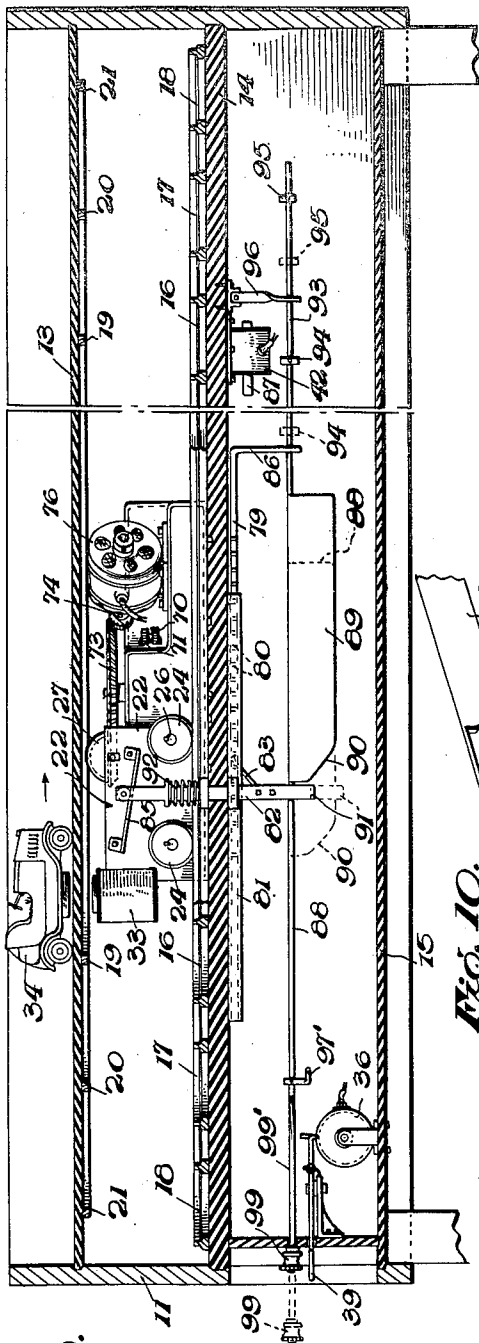


Fig. 9.

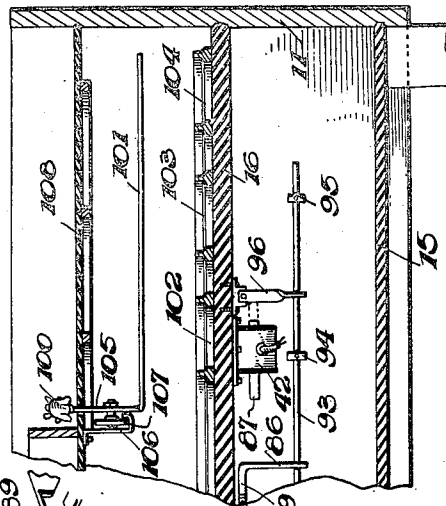


Fig. 11.

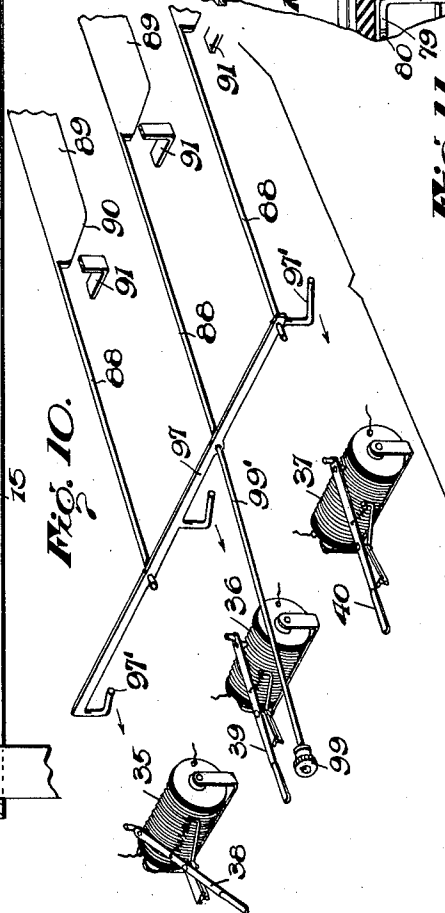


Fig. 10.

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UNITED STATES PATENT OFFICE

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ELECTRICAL RACE TRACK

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Application August 10, 1938, Serial No. 224,161

17 Claims. (Cl. 273-86)

The present invention relates to a racing game and refers particularly to a game wherein a plurality of objects are propelled over a race course.

5 An object of the invention is the provision of a racing game having a plurality of figures which are adapted to be actuated by individual operators, but which are not under the complete control of said operators during the running of a race.

10 A further object is to provide a racing game in which the racing objects are electrically propelled and controlled partially through manually actuated electrical means and partially through automatically actuated electrical means.

15 Another object is the provision of an electric race track having a plurality of electric cars provided with motors under the control of individual operators, said cars also having automatically controlled electromagnets which attract and move racing objects over the tracks with the cars. More specifically, the invention includes a plurality of manually actuated rheostats for controlling the speed of the car motors, and a second set of automatically actuated rheostats for controlling the strength of the current passing through the electromagnets. Thus, while each operator is capable of controlling the speed of his respective car, he does not have control of the rheostat which continuously varies the strength of the current passing through the electromagnet of his car. Consequently, the winning of a race is not governed entirely by the speed of a car, since it is possible for a car to be eliminated from the race if its speed is too fast when the attraction of its electromagnet for its respective racing object is relatively weak, particularly when the car is passing over a curved portion of the track.

40 Another object is the provision of motor actuated cams for automatically operating the second set of rheostats which control the current passing through the electromagnets.

A further object is to provide means for automatically rendering each car inoperative when it has travelled a predetermined distance over its respective track. In this connection, car actuated means are employed to progressively move a slidable bar towards a switch which is eventually opened when the car has travelled a predetermined distance.

A still further object is the provision of means for resetting the bar and switch when it is desired to start another race.

55 Another object is the provision of a casing

or table for supporting and concealing the cars and the operating and controlling mechanism therefor, whereby the racing objects will be the only elements in actual view during the race.

A further object is the incorporation of a mechanical rabbit in association with the several cars and racing objects. In this connection, means are employed to mount the rabbit so that it will always travel about the tracks in advance of the leading car.

With the foregoing and other objects in view, the invention will be now more fully described, reference being had to the accompanying drawings in which:

Figure 1 is a perspective view of the racing game with the racing figures in starting position.

Figure 2 is an enlarged section through a portion of the table on line 2-2a of Figure 1.

Figure 2a is a section complementary to Figure 2, also on line 2-2a of Figure 1.

Figure 3 is a diagram of the various electrical circuits.

Figure 4 is an end elevation of one of the cars positioned on its respective track.

Figure 5 is a side elevation of the car shown in Figure 4.

Figure 6 is a plan view partly in section of the cam operated rheostats.

Figure 7 is a vertical section through the mechanism shown in Figure 6.

Figure 8 is a detail of the cams.

Figure 9 is a vertical section through the table.

Figure 10 is a detail of the resetting mechanism, and

Figure 11 is a section illustrating a modification of the invention.

Referring now to Figures 1, 2 and 2a, the numeral 10 designates generally my electrical racing game. This comprises a table or casing suitably supported by legs 12. As will be observed, the table comprises a smooth, thin top 13 of non-metallic material, an intermediate shelf 14, and a base or bottom 15. As will be hereinafter described in greater detail, all of the operating mechanism, as well as certain elements of the racing devices are enclosed within the casing 12 between the top 13 and the base 15, and are thus concealed from view.

The numerals 16, 17 and 18 designate three tracks, each in the form of a loop to provide an endless track. It is to be understood that these tracks are merely representative, and that any number may be provided, as desired. Directly above the tracks are located trolley rails 19,

20 and 21, respectively, one for each track. These rails are secured to the underside of the top 13, and, as will be hereinafter described in greater detail, the tracks and rails are included in and form part of an electric circuit.

Referring to Figures 2, 4 and 5, each track is adapted to accommodate a car 22 comprising a frame 23 supported on wheels 24 which, in turn, are adapted to engage and ride over the rails of its respective track. Each car is provided with a motor 25 operatively connected to one of the shafts 26 for driving one set of wheels of the car. If desired, the motor may be geared to both shafts for driving both sets of wheels. A trolley wheel 27 is mounted in the front top portion of the frame 23 and is flanged so that it will engage and be maintained in operative contact with its respective trolley rail. The trolley wheel 27 is fixed to a shaft 28 which is journaled in a yoke or bracket 29. The ends of the shaft 28 pass through longitudinal openings 30 formed in opposite sides of the frame 23. A coil spring 31 is positioned between the base of the bracket 29 and a cross bar 32 of the frame 23 and normally urges the bracket, shaft and trolley wheel into operative engagement with its respective trolley rail. This movement of the bracket and trolley wheel is permitted by reason of the ends of the shaft 28 being slidable in the openings 30.

An electromagnet 33 is mounted at the rear upper end of the frame 23 and is electrically connected to the trolley wheel 27. It is to be understood that the magnet may be mounted in the center or at the front of the frame if desired. As will be observed (see Figure 5) when a car 22 is positioned on its respective track, the upper end of the electromagnet is located in close proximity to the underside of the table top 13, and is adapted, when energized, to attract through the thin, non-metallic top 13, a metallic object or figure 34 supported on said top. These objects may be of any configuration, and, in the present instance, are in the form of racing automobiles. If desired, however, each object may represent a race horse or any other conventional racing device.

Referring to Figures 1, 9 and 10, the speed of the motor 25 of each car is adapted to be controlled by one of three rheostats 35, 36 and 37, which are provided with control levers 38, 39 and 40, respectively, mounted on the outside of the table or casing 11 in convenient position to be grasped by the persons who operate and control the various cars. These rheostats are merely diagrammatically illustrated, since they may be of any well known construction and each is electrically connected to one of the tracks 16, 17 and 18, whereby operation of the levers will control the speed of the motors 25 of the cars 22.

The circuit for electrically connecting the tracks, trolleys and rheostats, is diagrammatically shown in Figure 3. Assuming that the circuit is closed, the current will pass through the incoming line 41, and through each of three switches 42, 43 and 44, which are adapted to be closed when the device is reset, as will be hereinafter described in detail. The current then passes through switch 42 and rheostat 35 to rail 45 of track 16. The car 22 positioned on this track bridges the circuit from rail 45 to rail 46, and thus the current passes through and energizes motor 25, whereby the car is propelled around the track 16. The current passes

from rail 46 to the outgoing line 47, thus completing the circuit through track 16. In like manner, the current passes through switch 43, rheostat 36 and rail 48 of track 17. The current then passes through the car located on this track and into the return line 47 through the other rail 49. In a similar manner, current also passes through switch 44, rheostat 37 and rails 50 and 51 of track 18.

With the arrangement as thus far described, the operation of the cars is entirely under the control of the operators actuating the control levers 38, 39 and 40. In order, however, to take the operation of the cars somewhat out of the control of the several operators, I provide means which automatically controls the strength of the current passing through the electromagnets 33 of the various cars. This control is entirely automatic so that the ultimate result of each race is unpredictable. Thus, the present invention is designed to provide means for permitting the speed of the various cars to be entirely within the control of the operators. This manual control is offset, however, by the provision of means for automatically controlling the effectiveness of the electromagnets in carrying the objects over the table top 13. With this arrangement, mere speed does not insure the winning of a race, since if the current passing through one of the electromagnets is sufficiently weak as the car passes around one of the curves, it is possible that the centrifugal force may throw one of the objects 34 out of electrical contact with the magnet and thus remove the operator of the car from the race.

The means for automatically controlling the electromagnets comprises a second set of rheostats 52, 53 and 54 (see Figs. 6 and 7). These rheostats control the current passing through the magnets 33 of the cars 22 and are provided with controlling levers 55, 56 and 57, respectively. All of these rheostats and levers are mounted in a frame 58 supported between the shelf 16 and the base 15 (see Figs. 2a and 9). Each operating lever is pivoted intermediate its ends in the frame and is provided at its outer end with a ball rider 59 which is adapted to move over its respective rheostat and thus vary the resistance in the usual manner. The inner ends of the operating levers are positioned about a central axis or shaft 60 mounted in the frame 58. Upon this shaft are eccentrically mounted three cams 61, 62 and 63, to which are rigidly connected pinions 64, 65 and 66, respectively. The inner end of each operating lever is provided with a roller 67 and each lever is also connected to a coil spring 68 adjacent its outer end which is adapted to urge the lever into contact with the cams, whereby its roller will always be in contact with and ride upon one or more of the cams, depending upon their relative positions. As will be observed, while the three cams are of substantially the same dimensions, the pinions 64, 65 and 66 are of different diameters. Furthermore, pinion 65 is fixed to a hollow sleeve 65' (see Fig. 8) surrounding the shaft 60, and this sleeve passes through openings in cam 61 and pinion 64, and is rigidly connected to cam 62.

A second shaft 69 is journaled in the frame 58 and has fixed thereto, large gear wheels 70, 71 and 72, which mesh with pinions 64, 65 and 66, respectively. The upper end of shaft 69 passes through the top of the frame 58 and has fixed thereto a large bevel gear 73. This gear 73

meshes with a small bevel gear 74 fixed to the shaft 75 of an electric motor 76. This motor is connected into the electric circuit (see Fig. 3) and is thus energized when the circuit is closed.

5 With this construction, and assuming that the switches 42, 43 and 44 are closed, the current, in addition to passing through the rheostats 35, 36 and 37, will also pass over the line 77 and energize the motor 76. Furthermore, the current will pass over the line 78 and through the rheostats 52, 53 and 54. The current, after passing through rheostat 52, will pass through the trolley rail 19, and thence through the trolley 27 and electromagnet 33 of the car which is located on track 16. In like manner, the current will pass through rheostat 53, trolley rail 20, and then through a car on track 17. Furthermore, the current will pass through rheostat 54, trolley rail 21 and a car on track 18. The current then passes to the return line 47.

With this construction, and assuming that the cars are all lined up at a designated starting point on the several tracks (see Fig. 1), the automobiles 34 are placed on the board 13 at points over their respective magnets 33. These magnets will attract the automobiles through the thin table top 13, and will convey them over the table as the motors 25 are energized. As heretofore described, upon manual operation of the control levers 38, 39 and 40 by separate operators, the cars 22 will be propelled around their respective tracks in accordance with the movement of the levers over the coils of the rheostats. At the same time, operation of motor 76 will rotate the gears 70, 71 and 72 which, in turn, will rotate their respective pinions 64, 65 and 66. This will rotate the eccentrically mounted cams 61, 62 and 63, and will thereby swing the levers 55, 56 and 57 about their pivots, and thus move the ball rider 59 over the coils of the rheostats 52, 53 and 54. This will have the effect of varying the strength of the current passing through the magnets 33 and thus, while each operator has control of the speed of his car, he does not have control over the magnetic attraction applied to the figures or automobiles 34 by the magnets 33.

The arrangement is such that cams 61, 62 and 63 will normally function to act upon and move levers 55, 56 and 57, respectively, about their pivots. As the cams rotate, each one will, under certain conditions, act solely upon one of the rollers 67, while others of the cams will act independently upon other of the rollers. At other times, however, two of the cams may simultaneously function to move one of the levers about its pivot. At certain infrequent intervals, all of the cams will simultaneously assume a position in contact with one of the rollers and in this position, the respective ball rider will be so positioned with respect to its rheostat that its respective magnet will become too weak to convey its automobile 34 in operative position with its car 22. This, of course, will have the effect of releasing the automobile from its car and will thus remove the operator controlling this car from the race. At other times, the cams assume positions which will reduce the current passing through one of the magnets somewhat, such as to permit the magnet to attract the object, providing the car is not travelling at too great a speed as it rounds one of the curves of its respective track. If, however, the operator is actuating his respective rheostat so that his car is travelling at its maximum speed when this hap-

pens, then as the car reaches one of the curves the centrifugal force will be sufficient to throw the automobile away from its operative position over its magnet, and thus remove this operator from the race. It will be apparent, therefore, that the winning of the race does not depend entirely upon the speed at which a car is permitted to travel by the operation of a manually controlled rheostat. Thus, it is necessary for each operator to take into consideration the fact that the strength of the magnet on his car is being constantly changed, and that it is possible for him to throw his car out of the race if he permits it to assume too great a speed at certain times.

The length or duration of the race may be controlled as desired, that is, the race may be determined by the car which successfully carries its object around a predetermined number of circuits of its respective track. In the present instance, the device is set for a race of 25 circuits or laps of each track. Means are provided to automatically control the running of the race and to open the circuit to one or all tracks when a car has negotiated a designated number of laps. This control means (see Figures 4, 5, 9 and 10) comprises three notched bars 79, each being provided with a definite number of notches 80, one for each lap which is to be negotiated. In the present instance, bar 79 is provided with 25 notches, and, therefore, the race will be determined by the first car which has successfully negotiated 25 laps of its track. The bars 79 are slidably mounted in guide members 81 which are supported below the shelf 14. Each bar is operatively associated with a vertically movable lever 82 provided with a spring arm 83, the free end of which is engageable with the notches 80 in the bar 79. Each lever 82 is provided with a laterally projecting roller 84 which projects inwardly into the path of an inclined flange or rail 85 carried at the side of the frame 23 of each car 22.

With this construction, and assuming that the cars are travelling about their tracks, each time a car passes its respective lever 82, its inclined flange or rail 85 will pass under the roller 84 of its lever 82, and thus raise the roller and lever during its passage past the same. This raising of the flexible spring arm 83 will have the effect of pushing the slidable bar 79 a predetermined distance. After the flange 85 has passed from under the lever 82, the latter will drop down to its normal position. At the same time, the spring arm 83 will also drop down and the arrangement is such that the free end of the arm will engage the next succeeding notch. Thus, when the car makes another loop and the flange 85 again passes under the roller 84 of the lever, the latter will again be raised and the spring arm 83 will slide the bar 79 a further predetermined distance. This operation will continue until the car has negotiated the 25 laps.

Referring to Figures 9 and 10, it will be observed that one end of the bar 79 is provided with a downwardly extending extension 86 which is positioned in the path of one of the switches 42, 43 or 44. Assuming that the switch shown in Figure 9 is switch 42, the bar 79 will be moved toward the switch button 87, and as the last lap 70 is completed, the extension 86 will contact the button 87 and open the switch 42.

Referring to Figure 3, it will be observed that this action will open the circuit to track 16 and thus deenergize the motor and magnet of the

car on this track. As each of the cars on tracks 17 and 18 finish their respective 25 laps, their notched bars will actuate their respective switches 43 and 44 and thus deenergize the motors and magnets of these cars. When the last switch has been actuated, the cam actuating motor 76 will also be shut down. It is to be understood, however, that after a car has won a race, it is not necessary for the other cars to complete their 25 laps, since any of the control levers 38, 39 and 40 of the rheostats 35, 36 and 37 can be manually moved over to zero position which will open the circuit through its car.

Assuming that all of the cars have been allowed to complete their 25 laps, they will be in substantially the correct position for starting another race. If the game is coin controlled, then it will be necessary to insert a coin and operate a reset mechanism which will reset the notched bars 79 and close the switches 42, 43 and 44. This reset mechanism comprises a plurality of reset rods 88, one for each notched bar, which are positioned or mounted in the table below the notched bars. Each rod is provided with an intermediate widened portion 89 (see Figure 9) which terminates at one end in an inclined or tapered portion 90 normally positioned adjacent the lower end of one of the levers 82. The extreme lower end of each lever 82 is provided with a laterally projecting flange 91, which is positioned in the path of the widened portion 89 of the rod 88 and directly in advance of the inclined portion 90. Each lever 82 is also provided with a coil spring 92 which normally maintains the lever in its operative position, but permits the same to be pulled downwardly against the tension of the spring.

The extreme inner end of the bar 88 is provided with a narrow portion 93 projecting inwardly from the widened portion 89. This portion 93 is provided with lugs 94 and 95, respectively. Lug 94 is located in the path of the extension 86 of the notch bar 79, while lug 95 is adapted to engage a swinging arm 96 and move it into operative engagement with the switch button 87 for closing its respective switch. Each rod 88, forwardly of the widened portion 89, is connected to the other rods by means of a crossbar 97, which is provided with three depending arms 97', one for each rod 88. These arms are adapted to contact their respective control levers 38, 39 and 40 and render their respective rheostats inoperative.

With this construction, and assuming that a coin has been inserted in the coin slot 98, this will release the rods 88 through any desired coin control mechanism (not shown). Thereafter, the rods 88 may be pulled forwardly by grasping the handle 99 which is connected to an extension 99' of the center rod 88 (see Figure 10). This action will have the effect of first moving each lever 82 downwardly against the tension of its spring 92 by reason of the engagement of the widened portion 89 with the flange 91 on the lower end of the lever (see dotted lines, Fig. 9). In this manner, the spring arm 83 will be disengaged from the notched bar 79. The lug 94 is so positioned that it will engage the extension 86 as soon as the spring arm 83 is clear of the notched portion of the bar 79. This engagement of the lug 94 with the extension 86 will reset the bar 79 and bring it back to the starting position. Further movement of the rods 88 will move the control levers 38, 39, 40 to zero position, providing that the levers have not been manually re-

turned to their starting positions. Finally, each lug 95 will engage its pivoted arm 96 and actuate its respective switch button 87, so that each of the switches 42, 43 and 44 will have closed the circuits to the various tracks whereby the car motors and electromagnets will be energized for the next race immediately upon operation of the control levers 38, 39 and 40 by each individual operator.

As hereinbefore described, if all cars are permitted to negotiate the entire 25 laps, they will be in substantially correct starting position. If, however, after a car has won the race, it is not desired to allow the other cars to complete their full laps, then these cars may be brought around to the starting position by actuation of their respective control levers. When these latter cars reach the starting point, they may be retained in this position by moving the control levers to zero position. If desired, a single switch may be substituted in place of the three switches 42, 43 and 44, which would result in the entire mechanism being rendered inoperative as soon as one car has won the race. Furthermore, a bell may be associated with each stop mechanism to indicate when a car has won the race. In this connection, a flag mechanism may also be incorporated to indicate when each car has completed the race.

Due to the fact that the car on the outside track 18 must travel over a longer course than the cars on tracks 16 and 17, and furthermore, since the cars on tracks 17 and 18 must travel over longer courses than the car on track 16, means are provided to compensate for this inequality in the relative lengths of the tracks. In the present instance, I propose to so set rheostat 54 under its bail rider that it will render the attraction of the magnet 33 of its respective car, greater than that of the magnets of the cars on tracks 16 and 17. In like manner, rheostat 53 will be set so that the attraction of the magnet of the car on track 17 will be greater than that of the magnet of the car on track 16. Thus, the possibility of the automobiles 34 on tracks 16 and 17 losing magnetic attraction necessary to pull them around the turns, is greater than that of the automobile on track 18. This overcomes the disadvantage of the automobile on track 18 having further to travel than the automobiles on tracks 16 and 17. In like manner, the hazard of the car on track 17 losing its automobile is greater than that of the car on track 16.

It is to be understood that the number of tracks may be varied as desired. Furthermore, the figure may be constructed to simulate race horses or whippets. Any change from one type of figure to the other can be easily made, since it is only necessary to substitute horses and dogs for the racing cars. If the figures are to simulate dogs or whippets then the mechanism may be changed to include a rabbit which will be propelled around the track in front of the racing dogs.

Referring to Figure 11, there is disclosed a modified form in which whippets (not shown) replace the racing cars. In this connection, there is provided a rabbit 100 which is designed to travel in advance of the leading whippet. The only change that is necessary over the hereinbefore described structure, is the provision of a push bar 101 which extends across the three tracks 102, 103 and 104. This bar is connected to the rabbit 100 by means of a vertically extending portion 105. The entire unit is support-

ed from a guide rail 106 which extends around the race course adjacent the inner track 102. One or more wheels 107 are supported by and laterally of the extension 105 and ride in the rail 106. As will be observed, all of this mechanism is located below the table tops 108 with the exception of the rabbit 100 and a small portion of the extension 105, which projects through a slot 109 in the table top. This slot extends parallel to the tracks.

With this construction, the car which is in front will contact the push bar 101 and thus move the rabbit around the track. If, during the race, either of the other cars forges ahead of the said which has initially pushed the rabbit, then this second car will contact the push bar and take over the duty of pushing the rabbit around the track. It will thus be apparent that regardless of how the cars progress around the tracks, that one which is in advance will always contact the push bar whereby the rabbit will at all times be in advance of the leading whippet or dog.

I claim:

1. In a racing game, an electric circuit, a plurality of tracks, the rails of which form a part of the circuit, a plurality of independently movable racing cars adapted to travel over said tracks, each car including a propelling motor and an electro-magnet adapted to be energized through the circuit, a plurality of racing figures, one for each car, supported above and in spaced relation to said electro-magnets and adapted to be carried by said magnets around their respective tracks, manually operable electrical means included in said circuit for individually controlling the speed of each motor, and automatically actuated electrical means also included in said circuit for varying the effectiveness of said electro-magnets.

2. In a racing game, an electric circuit, a plurality of tracks, the rails of which form a part of the circuit, a plurality of independently movable racing cars adapted to travel over said tracks, each car including a propelling motor and an electro-magnet adapted to be energized through the circuit, a plurality of racing figures, one for each car, supported above and in spaced relation to said electro-magnets and adapted to be carried by said magnets around their respective tracks, manually operable rheostats included in said circuit for individually controlling the speed of each motor, and automatically actuated rheostats also included in said circuit for varying the effectiveness of said electro-magnets.

3. In a racing game, an electric circuit, a plurality of tracks, the rails of which form a part of the circuit, a plurality of independently movable racing cars adapted to travel over said tracks, each car including a propelling motor and an electro-magnet adapted to be energized through the circuit, a plurality of racing figures, one for each car, supported above and in spaced relation to said electro-magnets and adapted to be carried by said magnets around their respective tracks, manually operable rheostats included in said circuit for individually controlling the speed of each motor, and means for automatically controlling the effectiveness of said electro-magnets, said means comprising a plurality of rheostats included in said circuit, one for each magnet, operating levers for said rheostats, cams operatively associated with said levers, and means for operating said cams.

4. In a racing game, an electric circuit, a plurality of tracks, the rails of which form a part of the circuit, a plurality of independently movable racing cars adapted to travel over said tracks, each car including a propelling motor and an electro-magnet adapted to be energized through the circuit, a plurality of racing figures, one for each car, supported above and in spaced relation to said electro-magnets and adapted to be carried by said magnets around their respective tracks, manually operable rheostats included in said circuit for individually controlling the speed of each motor, and means for automatically controlling the effectiveness of said electro-magnets, said means comprising a plurality of rheostats included in said circuit, one for each magnet, operating levers for said rheostats, a plurality of co-axially mounted cams operatively associated with said levers, and an electric motor included in said circuit and operatively connected to connected to said cams.

5. In a racing game, an electric circuit, a plurality of tracks, the rails of which form a part of the circuit, a plurality of independently movable racing cars adapted to travel over said tracks, each car including a propelling motor and an electro-magnet adapted to be energized through the circuit, a plurality of racing figures, one for each car, supported above and in spaced relation to said electro-magnets and adapted to be carried by said magnets around their respective tracks, manually operable rheostats included in said circuit for individually controlling the speed of each motor, and means for automatically controlling the effectiveness of said electro-magnets, said means comprising a plurality of rheostats included in said circuit, one for each magnet, said rheostats being positioned about a central axis, operating levers for said rheostats having their inner ends extending inwardly toward said central axis, a plurality of cams co-axially supported at said central axis, and operatively associated with said levers, and means for operating said cams.

6. In a racing game, an electric circuit, a plurality of tracks, the rails of which form a part of the circuit, a plurality of independently movable racing cars adapted to travel over said tracks, each car including a propelling motor and an electro-magnet adapted to be energized through the circuit, a plurality of racing figures, one for each car, supported above and in spaced relation to said electro-magnets and adapted to be carried by said magnets around their respective tracks, manually operable rheostats included in said circuit for individually controlling the speed of each motor, and means for automatically controlling the effectiveness of said electro-magnets, said means comprising a plurality of rheostats included in said circuit, one for each magnet, said rheostats being positioned about a central axis, operating levers for said rheostats having their inner ends extending inwardly toward said central axis, a plurality of cams, one for each lever, co-axially supported at said central axis, and operatively associated with said levers, a plurality of pinions of different sizes co-axially supported and associated with said cams, and means for rotating said gears to effect operation of said cams.

7. In a racing game, a table having a non-metallic top and a bottom shelf spaced from said top, an electric circuit, a plurality of tracks supported on said shelf and forming a part of the

circuit, a plurality of independently movable racing cars adapted to travel over said tracks, each car including a propelling motor and an electro-magnet adapted to be energized through the circuit, said electromagnet being located in close proximity to the under side of the table top when the car is in operative position on one of the tracks, a plurality of racing figures, one for each car, adapted to be supported on the table top above the cars and to be moved thereover by the electro-magnets, and electrical means included in said circuit for controlling the operation of said motors and the effectiveness of said electro-magnets.

8. In a racing game, a table having a non-metallic top and a bottom shelf spaced from said top, an electric circuit, a plurality of tracks supported on said shelf and forming a part of the circuit, a plurality of independently movable racing cars adapted to travel over said tracks, each car including a propelling motor and an electro-magnet adapted to be energized through the circuit, said electro-magnet being located in close proximity to the under side of the table top when the car is in operative position on one of the tracks, a plurality of racing figures, one for each car, adapted to be supported on the table top above the cars and to be moved thereover by the electro-magnets, manually operable rheostats included in said circuit for individually controlling the speed of each motor, and automatically actuated rheostats also included in said circuit for varying the effectiveness of said electro-magnets.

9. A car for use with an electric racing game in which a plurality of tracks and sets of manually and automatically controlled rheostats are included in an electric circuit, said car comprising a frame, track engaging wheels carried by said frame, a motor mounted in said frame and operatively connected to at least one of said wheels, and an electro-magnet carried by said frame and adapted to attract a racing figure, said motor and electro-magnet being adapted to be energized through the electric circuit and to be controlled by certain of said rheostats.

10. A car for use with an electric racing game in which a plurality of tracks and sets of manually and automatically controlled rheostats are included in an electric circuit, said car comprising a frame, track engaging wheels carried by said frame, a motor mounted in said frame and operatively connected to at least one of said wheels, and an electro-magnet carried at the upper end of said frame and adapted to attract a racing figure, said motor and electro-magnet being adapted to be energized through the electric circuit and to be controlled respectively by certain of said manually and automatically controlled rheostats.

11. In a racing game, an electric circuit, a plurality of tracks, the rails of which form a part of the circuit, a plurality of independently movable racing objects adapted to travel over said tracks, each object including a propelling motor adapted to be energized through the circuit, a plurality of switches, one for each of said tracks for opening and closing the circuit through its respective track, and object controlled means associated with each switch and track for opening the switch when its respective object has traveled a predetermined distance, said means including a bar slidably mounted in the path of the switch, and a member operatively associated with said bar and positioned in the path of an object, whereby said object will engage said member and

move said bar a predetermined distance toward the switch upon each movement of said object past said member.

12. In a racing game, an electric circuit, a plurality of tracks, the rails of which form a part of the circuit, a plurality of independently movable racing objects adapted to travel over said tracks, each object including a propelling motor adapted to be energized through the circuit, a plurality of switches, one for each of said tracks for opening and closing the circuit through its respective track, and object controlled means associated with each switch and track for opening the switch when its respective object has traveled a predetermined distance, said means including a notched bar slidably mounted in the path of the switch, a lever mounted at one side of the track and provided with an arm engageable with the notches in the bar, said object having a projection adapted to move said lever and slide said bar a predetermined distance toward the switch, upon each movement of said object past said lever.

13. In a racing game, an electric circuit, a plurality of tracks, the rails of which form a part of the circuit, a plurality of independently movable racing objects adapted to travel over said tracks, each object including a propelling motor adapted to be energized through the circuit, a plurality of switches, one for each of said tracks for opening and closing the circuit through its respective track, and object controlled means associated with each switch and track for opening the switch when its respective object has traveled a predetermined distance, said means including a notched bar slidably mounted in the path of the switch, a lever mounted at one side of the track and provided with an arm engageable with the notches in the bar, said object having a projection adapted to move said lever and slide said bar a predetermined distance toward the switch upon each movement of said object past said lever, and means for resetting each bar after its respective switch has been opened, said means including a reset rod slidable in the path of said lever for moving the latter and its arm out of operative engagement with said notched bar, whereby said bar and switch can be moved to reset position.

14. In a racing game, an electric circuit, a plurality of tracks, the rails of which form a part of the circuit, a plurality of independently movable racing objects adapted to travel over said tracks, each object including a propelling motor adapted to be energized through the circuit, a plurality of switches, one for each of said tracks for opening and closing the circuit through its respective track, and object controlled means associated with each switch and track for opening the switch when its respective object has traveled a predetermined distance, said means including a notched bar slidably mounted in the path of the switch, a lever mounted at one side of the track and provided with an arm engageable with the notches in the bar, said object having a projection adapted to move said lever and slide said bar a predetermined distance toward the switch upon each movement of said object past said lever, and means for resetting each bar after its respective switch has been opened, said means including a reset rod slidable in the path of said lever for moving the latter and its arm out of operative engagement with said notched bar, said reset rod being provided with rod and switch engage-

able elements respectively for returning the rod to reset position and for closing said switch.

15. In a racing game, a table having a non-metallic top and a bottom shelf spaced from said top, an electric circuit, a plurality of tracks supported on said shelf and forming a part of the circuit, a plurality of independently movable racing cars adapted to travel over said tracks, each car including a propelling motor and an electro-magnet adapted to be energized through the circuit, said electro-magnet being located in close proximity to the under side of the table top when the car is in operative position on one of the tracks, a plurality of racing figures, one for each car, adapted to be supported on the table top above the cars and to be moved thereover by the electro-magnets, electrical means included in said circuit for controlling the operation of said motors and the effectiveness of said electro-magnets, said non-metallic top being provided with a slot located above and following the contour of said tracks, a push bar extending transversely across and mounted for movement around said tracks by one of said cars, said push bar having an extension projecting upwardly through the slot in said top, and a figure mounted on said extension above the top in advance of said push bar and adapted during operation of the cars to be conveyed around the top by the leading car in advance of the racing figures.

16. In a racing game, a table having a non-metallic top and a bottom shelf spaced from said top, an electric circuit, a plurality of tracks supported on said shelf and forming a part of the circuit, a plurality of independently movable racing cars adapted to travel over said tracks, each car including a propelling motor and an electro-magnet adapted to be energized through the circuit, said electro-magnet being located in close

proximity to the under side of the table top when the car is in operative position on one of the tracks, a plurality of racing figures, one for each car, adapted to be supported on the table top above the cars and to be moved thereover by the electro-magnets, electrical means included in said circuit for controlling the operation of said motors and the effectiveness of said electro-magnets, said non-metallic top being provided with a slot located inwardly of and extending substantially parallel with the inner track, a push bar extending transversely across said tracks, a guide track carried by said shelf below said slot and supporting said push bar for movement about said table, said push bar having an extension projecting upwardly through the slot in said top, and a figure mounted on said extension above the top in advance of said push bar whereby engagement of the push bar by the leading car will move the figure around the top in advance of the racing figures.

17. In a racing game, an electric circuit, a plurality of tracks, the rails of which form a part of the circuit, a plurality of independently movable racing cars adapted to travel over said tracks, each car including a propelling motor and an electro-magnet adapted to be energized through the circuit, a plurality of racing figures, one for each car, supported above and in spaced relation to said electro-magnets and adapted to be carried by said magnets around their respective tracks, manually operable rheostats included in said circuit for individually controlling the speed of each motor, a plurality of rheostats, one for each magnet, and means for automatically and simultaneously actuating said last-mentioned set of rheostats to vary the effectiveness of said electro-magnets.

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